



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,029	12/11/2003	Hacwon Uhm	FDN-2821	8739

7590 02/17/2006

Attn: William J. Davis, Esq.
GAF MATERIALS CORPORATION
Legal Department, Building No. 10
1361 Alps Road
Wayne, NJ 07470

EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
----------	--------------

1731

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/734,029	UHM ET AL.	
	Examiner	Art Unit	
	Dennis Cordray	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/17/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "agitating the slurry causing said emulsifier to generate entrained air and separate the glass fibers into individual strands." The instant disclosure recites on page 6, "an emulsifier to generate entrained air when the slurry is thereupon agitated. This entrained air imparts a white color to the slurry and thus the slurry is referred to as 'white water.' This agitation of the aqueous slurry separates the glass fibers into individual strands." It is not clear how the emulsifier causes the fibers to be separated when the disclosure clearly states that the agitation separates the fibers.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirous (5518586) in view of Sage (6228281).

Mirous discloses a wet-laid process for forming a glass fiber mat (col 3, lines 64-67 and col 4, lines 10-24; col 5, lines 39-41) comprising

- (a) forming an aqueous "white water" slurry of fibers under agitation that can contain conventional additives, such as a lubricant and a dispersant,
- (b) removing the fibers from the water by collecting them on a screen to form a mat,
- (c) drying by means of vacuum,
- (d) applying a binder composition to the dewatered mat,
- (e) curing the binder composition at a temperature of at least 200 °C.

Mirous teaches that the most widely used binder is urea-formaldehyde resin (col 2, lines 3-5). Mirous also teaches that surfactants are typically added to the white water to aid in dispersion of the glass fibers. Since emulsifiers are surfactants (see Tiesler et al, col 1, lines 54-56), the surfactant of Mirous serves the purpose of an emulsifier in aiding dispersion of the glass fibers. The surfactant disclosed by Mirous, when added to the slurry and the slurry agitated, is capable of functioning as an emulsifier and causing the separation of the glass fibers into individual fibers because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

Mirous does not disclose the composition or properties of the lubricant. Mirous also does not disclose that the sized fibers have a loss on ignition between about 0.01% and about 0.75%.

Sage discloses treating glass fibers with a sizing composition comprising a cationic lubricant that can be a partially amidated polyalkylene imine such as a reaction product of C2 to C18 fatty acids with a polyethylene imine having a molecular weight from about 800 to about 50,000. The product has a residual amine value from about 200 to about 800 (abstract and col 4, lines 15-22). Sage also discloses that a suitable material is Emery 6760T, which is cited in the instant disclosure as having the required properties (col 4, lines 28-33). Sage further discloses that the amount of cationic lubricant is present in an amount from about 0.01% to about 0.1% by weight of the composition (col 4, lines 39-43). Sage teaches that the sizing composition helps prevent breakage of fibers during handling and reduces the fuzz on the surface of the fibers (col 1, lines 58-64; col 2, lines 10-13). Sage also teaches that emulsifiers are typically added to sizing compositions (col 2, lines 44-55), thus emulsifiers can also be present in the white water from the sizing composition. The sized fibers disclosed by Sage would inherently have the claimed LOI because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the

Art Unit: 1731

structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

The art of Mirous et al, Sage and the instant invention are analogous as they pertain to the art of treating glass fibers. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the claimed sizing composition in the mat of Mirous et al in view of Sage to reduce the breakage of fibers and creation of fuzz on the fiber surface.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirous (5518586) in view of Sage (6228281) and further in view of Jaffee et al (6432482).

Mirous and Sage do not disclose that the drying and binder application steps occur on adjacent endless moving conveyers.

Jaffee et al discloses a conventional process for continuously forming multiple layer nonwoven glass fiber mats (col 3, lines 49) comprising

(a) forming and drying a mat on a permeable moving belt (inherently endless) (col 4, lines 5-19),

(b) transferring the dried mat to a second moving screen or belt (inherently endless) where a binding resin is applied (col 4, lines 20-24).

Jaffee depicts the process in Figure 1, where the drying portion of the apparatus is clearly located adjacent to the binding portion of the apparatus.

The art of Mirous, Sage, Jaffee et al and the instant invention are analogous as they pertain to making nonwoven glass fiber mats. It would have been obvious to one of ordinary skill in the art at the time of the invention to use adjacent endless belts to dry and apply binder to the glass fiber mats of Mirous et al in view of Sage and further in view of Jaffee et al as a conventional process for making the mats.

Response to Arguments

Applicant's arguments filed 1/17/2006 have been fully considered but they are not persuasive.

The Examiner notes that the reference cited on page 6 of the arguments in support of the amendments to the claims (specifically citing page 5, line 27-page 6, line 3 of the specification) refers to a hydrolyzing agent added to the sizing composition and to the LOI of the sizing composition, but fails to mention an emulsifier, the generation of entrained air and separation of glass fibers into individual strands.

Applicant argues on page 6 that Mirous fails to teach that the glass fibers are dispersed into an aqueous medium containing an emulsifier and that Sage fails to disclose agitation of a slurry that contains an emulsifier to generate entrained air. Applicants further request that the rejection of all Claims be withdrawn because the cited references fail to teach all of the features of the independent claims.

Mirous teaches that surfactants are typically added to the white water to aid in dispersion of the glass fibers. Since emulsifiers are surfactants (see Tiesler et al, col 1, lines 54-56), the surfactant of Mirous serves the purpose of an emulsifier in aiding

Art Unit: 1731

dispersion of the glass fibers. The surfactant disclosed by Mirous, when added to the slurry and the slurry agitated, is capable of functioning as an emulsifier and causing the separation of the glass fibers into individual fibers because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

Sage teaches that emulsifiers are typically added to sizing compositions (col 2, lines 44-55), thus emulsifiers can also be present in the white water from the sizing composition.

Jaffee et al recites an example of a glass fiber slurry that contains a surfactant (col 6, lines 25-32, Example 1).

All three references teach the presence of an emulsifier or surfactant in the glass fiber slurry, either through direct addition or via the sizing composition. Thus, the addition of an emulsifier is anticipated or made obvious by the prior art cited.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


DRC


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700